

Water Efficient Landscape Ordinance Basics

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Purpose:

To comply with AB1881 requirements to reduce water consumption by requiring water efficient landscape design for new and landscape rehabilitation installations.

Consists of 2 documents: Chapter 14.17 (Water Efficient Landscape Ordinance) and the Design Standards (a support document which provides all process-oriented elements, water calculation worksheets and example equations, and certification statement sheets).

Applicability:

For landscape installation projects requiring a ministerial or discretionary permit and/or design review and are:

1. Developer-installed projects, public agency projects, and private development projects > 2,500 square feet of total landscaped area.
2. Homeowner-provided or homeowner-hired projects > 5,000 square feet of landscaped area
3. Rehabilitation landscape installation projects which meet the applicability criteria (above), are 50% of the total landscaped area on the property, and the modifications are planned to occur within one year.

Exemptions:

Any landscape project that does not require a ministerial or discretionary permit and/or design review. In addition, the following landscape projects are also exempt:

(all projects must comply with water conservation regulations, Chapter 14.16 Municipal Code)	
Registered historic sites	
Ecological restoration projects	
Public botanical gardens and arboretums	
Landscaping in Hazard Reduction and Fuel Modification Zones	
Landscape rehabilitation projects where replacement plantings have equal or lower water needs and the irrigation system is designed, operable and programmed to comply with City's water conservation regulations.	
Cemeteries not required to submit a complete <u>Landscape Design Package</u> ; must comply with the following Sections: Water Efficient Landscape Calculations (2.2), and Post-Installation Irrigation Scheduling/Maintenance (2.8 and 2.9).	

A Landscape Documentation Package must be submitted by the project applicant for review and approval prior to permit issuance and should include:

- 1) Project Information Summary
 - 2) Water Efficient Landscape Worksheet(s)
 - 3) Soil Management Plan
 - 4) Landscape Design Plan
 - 5) Irrigation Design Plan
 - 6) Certification of Design form
- (Elements 3, 4, and 5 may be combined into one plan sheet.)

A Certificate of Completion Package will include:

1. Landscape Installation Certificate of Completion form.
2. Irrigation scheduling parameters used to set the controller.
3. Landscape and irrigation maintenance schedules.
4. An irrigation audit report by a certified irrigation auditor or enrollment in the Municipal Water District of Orange County Landscape Performance Program (a free monthly audit program offered by MWDOC based on water usage billing; many City projects currently enrolled).

Self-certification Process-will streamline the permitting process and reduce costs for applicants and the City.

2 STEPS

1. Prior to permit issuance and installation – the landscape designer must sign a **Certification of Design** form, which includes their license number and/or professional stamp, stating landscape design is in conformance with the City ordinance and the requirements of the Design Standards document. A permit will not be issued unless the **Landscape Documentation Package** is complete, including the certification form (blue-lined into plans).
2. After installation and prior to permit final -the installation contractor or designer must sign a Landscape Installation Certificate of Completion form stating installation is complete and is in substantial conformance with the original plan. Once the **Landscape Installation Certificate of Completion Package** is accepted by the City, the permit can be finalized. The MAWA and EAWU calculations should be forwarded to MWDOC (or their representative) if the applicant chooses to enroll in their free auditing program. If not, the applicant must provide documentation of an audit from a certified auditor that the installed landscape complies with the requirements of the ordinance.

Definitions:

Estimated Applied Water Use (EAWU): the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the Design Standards. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

ET adjustment factor or “ETAF”: is equal to the plant factor divided by the irrigation efficiency factor for a landscape project, as described in the Design Standards. The ETAF is calculated in the context of local reference evapotranspiration, using site-specific plant factors and irrigation efficiency factors that influence the amount of water that needs to be applied to the specific landscaped area. -- A combined plant mix with a site-wide average plant factor of 0.5 (indicating a moderate water need) and average irrigation efficiency of 0.71 produces an ET adjustment factor of $(0.7) = (0.5/0.71)$, which is the standard of water use efficiency generally required by this Water Efficient Landscape Ordinance and the Design Standards, except that the ETAF for a special landscape area shall not exceed 1.0.

Irrigation efficiency: the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this Water Efficient Landscape Ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems. An average plant factor of 0.5 (indicating a moderate water need) and average irrigation efficiency of 0.71 produces an ET adjustment factor of $(0.7) = (0.5/0.71)$

Landscaped area: all the planting areas, *turf* areas, and *water features* (including pools, ponds, fountains, and any other water feature) in a Landscape Design Plan which are subject to and must be included in the *Maximum Applied Water Allowance* and *Estimated Applied Water Use* calculations. The *landscaped area* does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other *pervious* or *non-pervious hardscapes*, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

Maximum Applied Water Allowance (MAWA): is the upper limit of annual applied water for the established landscaped area as specified in Section 2.2 of the Design Standards. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscaped area. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.

Plant factor or plant water use factor: is a factor, when multiplied by ETo, which estimates the amount of water needed by plants. For purposes of this Water Efficient Landscape Ordinance, the plant factor range for low water use plants is 0 to 0.3; the plant

factor range for moderate water use plants is 0.4 to 0.6; and the plant factor range for high water use plants is 0.7 (70%) to 1.0 (100%). Plant factors cited in this Water Efficient Landscape Ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

Reference evapotranspiration or "ET_o": a standard measurement of environmental parameters which affect the water use of plants. ET_o is given expressed in inches per day, month, or year as represented in Appendix A of the Design Standards and is an estimate of the evapotranspiration of a large field of four-to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances (MAWA).

Smart automatic irrigation controller: an automatic timing device used to remotely control valves that operate an irrigation system and which schedules irrigation events using either evapotranspiration (weather-based) or soil moisture data.

Special Landscaped Area or SLA: an area of the landscape dedicated solely to edible plants such as orchards and vegetable gardens, areas irrigated with *recycled water*, *water features* using *recycled water*, or areas dedicated to active play such as parks, sports fields, golf courses, or areas where *turf* provides a playing surface. These areas may have an ET adjustment factor (ETAF) to 1.0 (100%).